Shareholder Disbursement Cash Receipt Cash Cash Supplier Employee Customer Inventory number
Description
Color
Unit of measure
Standard cost
Selling price
Quantity on hand
Reorder point
Reorder quantity Purchase Inventory Sale

Figure 1. An entity-relationship view of the sale and purchase events (under REA)

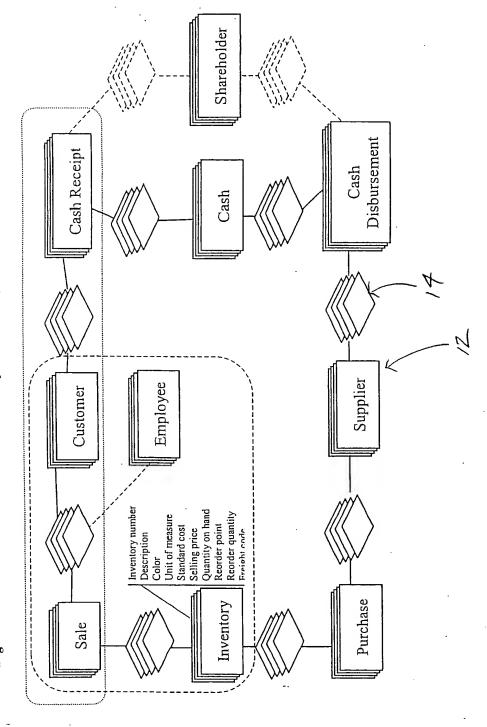


Figure 2. Proliferation of tables under entity-relationship model

Figure 3. Representation of one database table or array

Table (array) name

Attribute, column, or field name (1) Attribute, column, or field name (2) Attribute, column, or field name (3)

Attribute, column, or field name (4)

V 16e

Figure 4. Thumbnail representation of table/array proliferation under Figure 2

	Sale table 1	Sale table 2	Sale table 3	Sale table 4
	Attribute name (1)	Attribute name (1)	Attribute name (1)	Attribute name (1)
	Attribute name (2)	Attribute name (2)	Attribute name (2)	Attribute name (2)
	Attribute name (3)	Attribute name (3)	Attribute name (3)	Attribute name (3)
	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute name (4)
	Attribute name (47	711110010110110		
			Customer table 3	Customer table 4
	Customer table 1	Customer table 2	Attribute name (1)	Attribute name (1)
	Auribute name (1)	Attribute name (1)		Attribute name (2)
	Attribute name (2)	Attribute name (2)	Attribute name (2)	Attribute name (3)
7	Attribute name (3)	Attribute name (3)	Attribute name (3)	Attribute name (4)
/	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute frame (4)
, (Cash Receipts table 3	Cash Receipts table 4
_	Cash Receipts table 1	Cash Receipts table 2		Attribute name (1)
	Attribute name (1)	Attribute name (1)	Attribute name (1)	Attribute name (2)
	Attribute name (2)	Attribute name (2)	Attribute name (2)	, ,
	Attribute name (3)	Attribute name (3)	Attribute name (3)	Attribute name (3)
1	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute name (4)
		1	Inventory table 2	Inventory table 4
_	Inventory table 1	Inventory table 2	Inventory table 3	Attribute name (1)
_	Attribute name (1)	Attribute name (1)	Attribute name (1) Attribute name (2)	Attribute name (2)
	Attribute name (2)	Attribute name (2)	, , ,	Attribute name (3)
	Attribute name (3)	Attribute name (3)	Attribute name (3)	
	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute name (4)
		E 1	Employee table 3	Employee table 4
	Employee table 1	Employee table 2	Employee table 3	Attribute name (1)
	Attribute name (1)	Attribute name (1)	Attribute name (1)	
	Attribute name (2)	Attribute name (2)	Attribute name (2)	Attribute name (2)
	Attribute name (3)	Attribute name (3)	Attribute name (3)	Attribute name (3)
	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute name (4)
		0 1 11 2	Cash table 3	Cash table 4
	Cash table 1	Cash table 2	Attribute name (1)	Attribute name (1)
	Attribute name (1)	Attribute name (1)	Attribute name (2)	Attribute name (2)
	Attribute name (2)	Attribute name (2)		Attribute name (3)
	Attribute name (3)	Attribute name (3)	Attribute name (3)	
	Attribute name (4)	Attribute name (4)	Attribute name (4)	Attribute name (4)
	D1 1-1-1-1	Shareholder table 2	Shareholder table 3	Shareholder table 4
	Shareholder table 1	Shareholder table 2	Shareholder table 3	Shareholder table 4
	Attribute name (1)	Attribute name (1)	Attribute name (1)	Attribute name (1)
	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)
	Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3)
	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2)
	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4)	Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3)
	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 1	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 2	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 3	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 4
	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 1 Attribute name (1)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 2 Attribute name (1)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 3 Attribute name (1)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4)
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	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 1 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 1 Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 2 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 2 Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 3 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 3 Attribute name (1) Attribute name (2) Attribute name (3)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 4 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 4 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (3) Attribute name (4)
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	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 1 Attribute name (1) Attribute name (2) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 1 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 1 Attribute name (1) Attribute name (2)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 2 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 2 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (3) Attribute name (4) Cash disb. table 2 Attribute name (1) Attribute name (2) Attribute name (2)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 3 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 3 Attribute name (1) Attribute name (2) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 3 Attribute name (4)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 4 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 4 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 4 Attribute name (4)
	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 1 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 1 Attribute name (4) Attribute name (2) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 1 Attribute name (1)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 2 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 2 Attribute name (1) Attribute name (2) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 2 Attribute name (1)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 3 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 3 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 3 Attribute name (4)	Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Purchase table 4 Attribute name (1) Attribute name (2) Attribute name (3) Attribute name (4) Supplier table 4 Attribute name (1) Attribute name (2) Attribute name (2) Attribute name (3) Attribute name (4) Cash disb. table 4 Attribute name (1)

 $\label{lem:eq:comparison} \textbf{Figure 5. Thumbnail comparison of Figure 4 compared with ERP-oriented enterprise databases}$

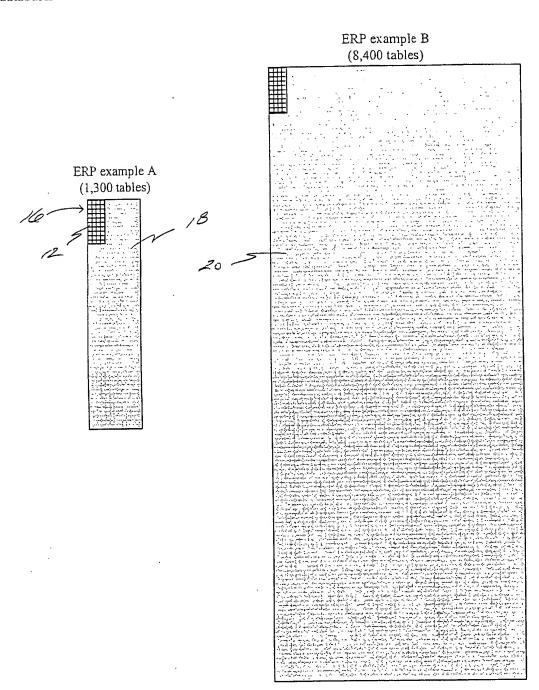


Figure 6. "Big E" events

"Big E" events

(Complete, Composite Processes)

Cash receipts Sales

Purchases Production orders

Hazardous chemical analyses

Figure 7. "little e" accounting events

events
accounting 6
) E"
"little

(Components of "Big E"composite events)

Cash receipts ["Big E" composite event]
Debit cash ["little e" component event]

Credit appropriate account |"little e" component event]

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Figure 8. "little e" retail sale component events

"little e" retail sale events

(Components of "Big E"composite events)
Retail sale ["Big E" composite event]

Scan product barcode ["little e" component event]

Accept cash ["little e" component event]
Place cash in till ["little e" component event]
Print receipt ["little e" component event]

Place product in bag ["little e" component event]
Place receipt in bag ["little e" component event]

Give bag to customer ["little e" component event]

Figure 9. "Big E" "little e" breakdown of hazardous chemical analysis event

events
chemical
hazardous chemical
e"
"little

(Components of "Big E"composite events)

Hazardous chemical purchase ["Big E" composite event]

Evaluate NFPA health rating ["little e" component event] Evaluate NFPA flammability rating ["little e" component event]

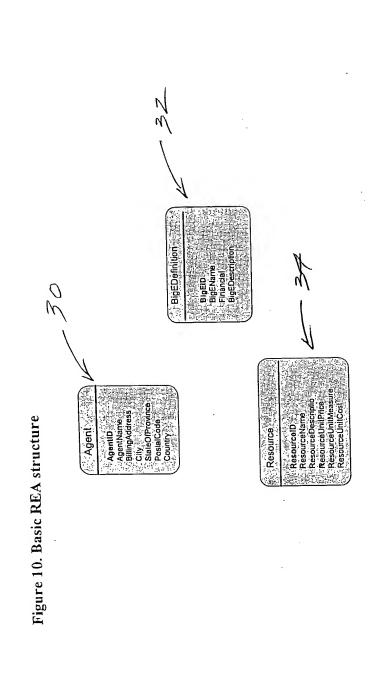
Evaluate INFFA Hammability rating | mure | component eve Evaluate NFPA reactivity rating ["little e" component event]

Evaluate UN hazard class ["little e" component event]

Record shock sensitivity ["little e" component event]

Evaluate water stability ["little e" component event]

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Agentin
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Figure 11. Expansion of events to include details

 $\mathcal{C}^{\mathcal{U}}$ LittleETranD
LittleETranDrineDate
LittleETranDrins
BigETrainDrins
LittleED UitleETransaction BigETranD BigETranTimeDate AgenID BigEID BigETransaction d d LittleElD
LittleEName
LittleEDescription
LittleEDest
BigELD
ResourceID LittleEDefinition BigEName BigEName Financial BigEDescription BigEDefinition 20 AgentID
AgentName
BillingAddress
City
StateOlProvince
PostatCode
Country ResourcelD ResourceName ResourceDescription ResourceUnitNace ResourceUnitNasaure ResourceUnitOost Agent n Resource

Figure 12. Event transaction tables created from event definition tables

W W LittleETrantDate
LittleETrantImeDate
LittleETrantInis
BigETrantD LittleETransaction AccountNumber
AccountName
ParentAccountNumber Account BigETraniD BigETranTimeDale AgenilD BigEID BigETransaction Figure 13. Support for traditional accounting model. 30 y y LINIEED LINIEED LINIEED CONTROL LINIEED CONTROL LINIEED CONTROL CONTRO LittleEDefinition BigEName BigEName Financial BigEDescriplion BigEDefinition \dot{v} Code Category Codes AgentID
AgenIName
BillingAddress
City
StateOfProvince
PostalCode ResourcelD ResourceName ResourceDescription ResourceUnilPrice ResourceUnilMeasure ResourceUnilCost Agent Resource

 σ *b* LittleETranD. = LittleETranDole
LittleETranUnits = BigETranUnits = LittleETranUnits = LittleEID LittleETransaction BigETranID BigETranTimeDate AgentID BigEID BigETransaction AccountNumber AccountName ParentAccountNumber Account 32 LittueEID LittueEName LittueEDescription LittueEData BigEID ResourcaID Account/Number LittleEDefinition BigElD BigEName Financial BigEDescriplion BigEDefinițion 0 W Code Category Codes Agentib
AgentiName
BillingAddress
City
StateOfProvince
PostalCode ResourcelD ResourceName ResourceDescription ResourceUnitNassure ResourceUnitNassure ResourceUnitNassure Àgent Resource

Figure 14. Events transactions rich store of enterprise data.

Figure 15. BigEDefinition table

ি 🎨 🦋 BigEDescription 🐑 ি	Cash purchase	Purchase of hazardous chemical	i Cash Sale
Financia	D		>
BigElD: St. BigEName Financial	25 PurchCash	27 HazChemPurch	28 Sale Cash

N

Figure 16. LittleEDefinition table

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器DiffieEID数图LittleEName制门BigEID。警察LittleEDescription等参加AccountNumber上LittleEDat部)ResourceID。
26 Debit Inventory
26: Credit Cash
27 NFPA Health Rating
27: NFPA Flammability Rating
27: NFPA Reactivity Rating
27 UN Hazard Class
27 Shock Sensitive
27 Stable in water
27 Unstable in water
28 Debit Cash

Figure 17. Resource table

W

source UnitCost",	\$15.00	
⁄leasure Re		
ssource UnitPrice ResourceUnitM	\$23.00 : Unit	The state of the s
ResourceDescription Re	Calcium carbide 100	
ResourceID, ResourceName	1 Acetylenogen	The second of th

Figure 18. Combined BigEDefinition/LittleEDefinition report

				1	
BIFEID	LittleEID	BigEName	and BigEDescription 36000000	LittleEName	LittleEDescription 188
26		PurchCash	Cash purchase		
26	5 45			drlnv	Debit Inventory
26	5 46			crCash	Credit Cash
27	1	HazChemPurch	Purchase of hazardous chemical		
27	7 47			NFPAHealth	NFPA Health Rating
27	7 48			NFPAFlam	NFPA Flammability Rating
27	7 49			NFPAReat	NFPA Reactivity Rating
27	7 50			UNHazClass	UN Hazard Class
27	51			ShockSense	Shock Sensitive
27	7 52			WaterStable	Stable in water
27	7 53			WaterUnstable	Unstable in water

Debit Cash Credit Revenue

drCash crRev

Cash Sale

SaleCash

55

28 28 28

Figure 19. BigETransaction table

<u>۲</u>			
1	1		
BigETranD@ BigEID AgentID SABIGETranTimeDate	1 2/15/2002 2:05:15 PM	1 2/15/2002 2:05:15 PM	1 2/15/2002 2:05:15 PM
nID BigEID Agent	152 26	133, 27	134 28
BigETrar			of the speciments of the contract of the formation

Figure 20. LittleETransaction table

		1	1								
LittleETranUnits	TO THE REAL PROPERTY AND ADDRESS OF THE PERSONS	2	15	<u>t</u>	5	Ź.	15	T	15		8
_LittleETranID@	132: 2/15/2002 2:05:15 PM:	132: 2/15/2002 2:05:15 PM	133 2/15/2002 2:05:15 PM	133: 2/15/2002 2:05:15 PM	133: 2/15/2002 2:05:15 PM	133, 2/15/2002 2:05:15 PM	133 2/15/2002 2:05:15 PM	133 2/15/2002 2:05:15 PM	133 2/15/2002 2:05:15 PM	134; 2/15/2002 2:05:15 PM	134 2/15/2002 2:05:15 PM
LittleEID	45	45	74	48	49	50	51	52	දිදි	54	55
LittleETranID	LEIL)	1162	1163	1164	1165.	1166	1167	1168	1169.	1170	1711

Figure 21. Query to create "Big E" event transaction record from event definition table.

INSERT INTO BigETransaction (BigEID, AgentID, BigETranTimeDate) SELECT BigEDefinition.BigEID, 1, '2002-02-15 14:05:15' WHERE BigEDefinition.BigEID=26; FROM BigEDefinition

Figure 22. Query to create "little e" event transaction records from event definition table.

INSERT INTO LittleETransaction (LittleED, BigETranID, LittleETranTimeDate, LittleETranUnits)

SELECT LittleEDefinition.LittleED, BigETranD, '2002-02-15 14:05:15', LittleETranUnits

WHERE LittleEDefinition.BigEID=26;

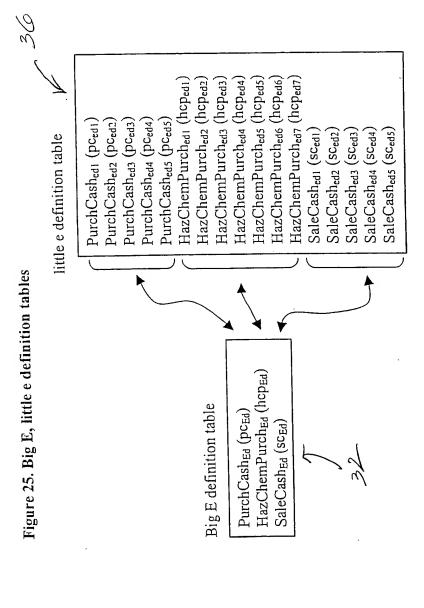
FROM LittleEDefinition

Figure 23. Inventory ledger materialization from component "little e" tables

100	<u>रु है। स</u>	15 Inventory ledger account 101-300 15 15 units x \$15 cost = \$225 inventory cost	ResourceUnitPrice ResourceUnitMeasure ResourceUnitCost \$15.00	Numberi EutriléEData RésourceID:	1	4.3			
eDate LittleETranUpit	15 PM 15 PM 15 PM 15 PM	15 PM 15 PM 15 PM 15 PM 15 PM 15 PM	sourceUnitPrice Rès \$23.00 Unit	ption :: - Account Number 101-300	ng y Rating	kating		101-100	: 200-100
TraniD LittleETranTimeDate	132 2/15/2002 2:05:15 PM 132 2/15/2002 2:05:15 PM 133 2/15/2002 2:05:15 PM 133 2/15/2002 2:05:16 PM	133 2/15/2002 2:05:15 PM 133 2/15/2002 2:05:15 PM 133 2/15/2002 2:05:15 PM 133 2/15/2002 2:05:15 PM 134 2/15/2002 2:05:15 PM 134 2/15/2002 2:05:15 PM	Resource Table Resource Discription ResourceDescription Re	張LittleEID会 * LittleEName等 ※BigEID気が続しittleEDescription語)	27 NFPA Healh Rating 27 NFPA Flammability Rating	27 NFPA Reactivity Rating	27 Shock Sensitive 27 Stable in water	27 Unstable in water 28 Debit Cash	28 Credit Revenue
tion Table	45. 46: 47:	49 50: 57: 57: 53: 54: 55:	Table	IleEName Big	46 crCash 47 NFPAHealth 48 NFPAFlam	49 NFPAReal 50 UNHazClass	51 ShockSense 52 WaterStable	53 WaterUnstable	ev.
LittleETransaction Table	1163 1163 1163 1164	1165 1166 1167 1168 1168 1170	Resource Table Resource D ResourceName Acetylenogen LittleEDefinition Table	RETITIOE CITI	46 crCash 47 NFPAHealt 48 NFPAFlam	49 NFPAReal 50 UNHazCla	51 Sho 52 Wat	53 WaterL	55 crRev

Figure 24. Cash ledger materialization from component "little e" tables

					Cash account 101-100	8 units x \$23 cost = \$184 cash debit				<u> </u>			nitMeasure Resource Unit Cost	\$15.00		LittleEData ResourceID;		in and the state of the state o	1			1.3	are selected and extended the sea constraints of the constraints of th	The second section of the section of the section of the second section of the section of t	the control of the co	ann aran i tambéanair a cana merapanair a tambéanair a cana merapanair a tambéanair a tambéanair a tambéanair a	The state of the s	
The state of the s	ETranID LittleEfran ImeDate: LittleEfranOnits	 			2/15/2002 2:05:15 PM	133 2/15/2002 2:05:15 PM	133: 2/15/2002 2:05:15 PM 15	133 2/15/2002 2:05:15 PM	133: 2/15/2002 2:05:15 PM	134: 2/15/2002 2:05:15 PM	134 2/15/2002 2:05:15 PM		Resource Description Resource Unitarical Resource Unitarional	Salcium carbide 100; \$23.00 Juit	LittleEDefinition Table	AEID SECTION AccountNumber	OS Dehit Inventory	26 Credit Cash	h Rating	27 NFPA Flammability Rating	27 NFPA Reactivity Rating		27 Shock Sensitive	27 Stable in water	27 Unstable in water	28 Debit Cash (101-100)	28 Credit Revenue	
LittleETransaction Table	ChitleETranID ChitleEID BigETranID	 	:	1164 AB		1166 50	1167 51	1168	1169		1171 55	Decource Table	Dennitrall DecourseName:	Acetylenogen	34 LittleEDefinition Table	A MANAGEMENT OF THE PROPERTY O	THE PROPERTY OF THE PROPERTY O		JG 47. NFDAHealth	48 NFPAFlam	49: NFPAReal	50 UNHazClass	51 ShockSense		53: WaterUnstable		55 crRev	



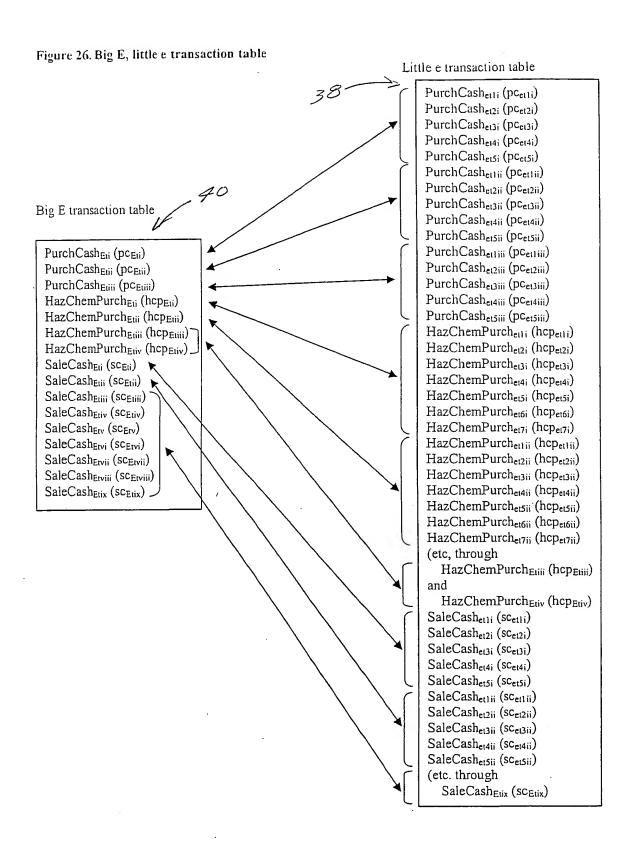


Figure 27. Combined big E, little e definition table

ı table
efinition
E/little e de
3ig E/1

Both Big E and little e PurchCash events are listed Both Big E and little e HazChemPurch

events are listed

Both Big E and little e SaleCash

events are listed

HazChemPurched3 (hcped3) HazChemPurcheds (hcpeds) HazChemPurched7 (hcped7) HazChemPurched1 (hcped1) HazChemPurched2 (hcped2) HazChemPurched4 (hcped4) HazChemPurched6 (hcped6) HazChemPurched (hcped) PurchCash_{ed4} (pc_{ed4}) PurchCashed5 (pced5) PurchCashed1 (pced1) PurchCashed2 (pced2) PurchCashed3 (pced3) PurchCashed (pced) SaleCash_{ed3} (sc_{ed3}) SaleCashed4 (SCed4) SaleCasheds (sceds) SaleCashed1 (scedi) SaleCashed2 (Sced2) SaleCash_{Ed} (sc_{Ed})

Figure 28. Combined Big E, little e transaction table

PurchCash _{Eti} (pc _{Eti}) PurchCash _{Eti} (pc _{eti}) PurchCash _{et3i} (pc _{et2i}) PurchCash _{et3i} (pc _{et3i}) PurchCash _{et3ii} (pc _{et3ii}) PurchCash _{et4iii} (pc _{et1iii}) PurchCash _{et4iii} (pc _{et1iii}) PurchCash _{et4iii} (pc _{et2iii}) PurchCash _{et4iii} (pc _{et3iii}) PurchCash _{et4iii} (pc _{et3iii}) PurchCash _{et4iii} (pc _{et5iii}) PurchCash _{et4iii} (pc _{et5iii}) PurchCash _{et5iii} (pc _{et5iii}) HazChemPurch _{Eti} (hcp _{Eti}) HazChemPurch _{eti} (hcp _{et1i})	(continued from prior column) HazChemPurcheiiii (hcpeiiii) (etc. from hcpettiii to hcpettiii) HazChemPurcheiiv (hcpetiv) (etc. from hcpettiiv to hcpettiv) (etc. from hcpettiiv to hcpettiv) SaleCashetii (scetti) SaleCashetii (scettii) SaleCashetii (scettii) SaleCashetii (scettii) SaleCashetii (scettii) SaleCashetiii (scettii) SaleCashetiii (scettiii) (etc. from scettiiii to scetsiii) SaleCashetiii (scetiii)
HazChemPurchet2i (hcpet2i) HazChemPurchet3i (hcpet3i) HazChemPurchet4i (hcpet4i) HazChemPurchet5i (hcpet5i) HazChemPurchet6i (hcpet6i) HazChemPurchet6i (hcpet6i) HazChemPurchet7i (hcpet7i) HazChemPurchet1ii (hcpet1ii) HazChemPurchet2ii (hcpet2ii) HazChemPurchet2ii (hcpet3ii) HazChemPurchet3ii (hcpet3ii) HazChemPurchet6ii (hcpet5ii) HazChemPurchet6ii (hcpet5ii) HazChemPurchet6ii (hcpet5ii) HazChemPurchet6ii (hcpet6ii) HazChemPurchet6ii (hcpet6ii) HazChemPurchet6ii (hcpet7ii) (continued next column)	(etc. from scetliv to ScetSiv) SaleCashEtv (scEtv) (etc. from scetlv to ScetSv) SaleCashEtvi (scEtvi) (etc. from scetlvi to scetSvi) SaleCashEtvii (scEtvii) (etc. from scetlvii to ScetSvii) SaleCashEtviii (scEtviii) (etc. from scetlviii to ScetSviii) SaleCashEtviii (scEtviiii) (etc. from scetlviii to ScetSviii) SaleCashEtix (scEtix) (etc. from scetlix to ScetSix) (etc.)

Figure 29. Combined Big E, little e definition and transaction table

Big E Definition PurchCash _{Ed} (pc _{Ed}) HazChemPurch _{Ed} (hcp _{Ed}) (continued from prior colu 'HazChemPurch _{et5i} (hcp _{et5i})	
Definition HazChemPurch _{Ed} (hcp _{Ed}) HazChemPurch _{et5i} (hcp _{et5i}	
SaleCash _{Ed} (sc _{Ed}) HazChemPurch _{et6i} (hcp _{et6i})	
PurchCash _{ed1} (pc _{ed1}) HazChemPurch _{et7i} (hcp _{et7i})	
PurchCash _{ed2} (pc _{ed2}) HazChemPurch _{Etii} (hcp _{Etii})	
PurchCash _{ed3} (pc _{ed3}) HazChemPurch _{ettii} (hcp _{etti}	
PurchCash _{ed4} (pc _{ed4}) HazChemPurch _{el2ii} (hcp _{el2ii}	
PurchCash _{ed5} (pc _{ed5}) HazChemPurch _{et3ii} (hcp _{et3i}	
HazChemPurch _{ed1} (hcp _{ed1}) HazChemPurch _{et4ii} (hcp _{et4i})	
Hag Cham Durch (han w) Hag Cham Durch w (han	
Har Cham Durch (han) Har Cham Durch (han	
HazChemPurched4 (hcped4) HazChemPurchel7ii (hcped7ii	
HazChemPurcheds (hcpeds) HazChemPurchEtiii (hcpEtii	
HazChemPurched6 (hcped6) (etc. from hcpet1iii to hcpet7ii	
HazChemPurch _{ed7} (hcp _{ed7}) HazChemPurch _{Etiv} (hcp _{Etiv}	
SaleCash _{ed1} (sc _{ed1}) (etc. from hcp _{et1iv to} hcp _{et7iv})
SaleCash _{ed2} (sc _{ed2}) SaleCash _{Eti} (sc _{Eti})	
SaleCash _{ed3} (sc _{ed3}) SaleCash _{et1i} (sc _{et1i})	
SaleCash _{ed4} (sc _{ed4}) SaleCash _{et2i} (sc _{et2i})	
SaleCash _{ed5} (sc _{ed5}) SaleCash _{et3i} (sc _{et3i})	
from here PurchCash _{Eti} (pc _{Eti}) SaleCash _{et4i} (sc _{et4i})	
on, big E, little PurchCashetti (pcetti) SaleCashetsi (scetsi)	
e transaction PurchCash _{et2i} (pc _{et2i}) SaleCash _{Etii} (sc _{Etii})	
records PurchCash _{et3i} (pc _{et3i}) SaleCash _{et1ii} (sc _{et1ii})	
PurchCash _{et4i} (pc _{et4i}) SaleCash _{et2ii} (sc _{et2ii})	
PurchCash _{et5i} (pc _{et5i}) SaleCash _{et3ii} (sc _{et3ii})	
PurchCash _{Etii} (pc _{Etii}) SaleCash _{et4ii} (sc _{et4ii})	
PurchCash _{et1ii} (pc _{et1ii}) SaleCash _{et5ii} (sc _{et5ii})	
PurchCash _{et2ii} (pc _{et2ii}) SaleCash _{et3ii} (sc _{etiii}) SaleCash _{etiii} (sc _{etiii})	
PurchCash _{et4ii} (pc _{et4ii}) SaleCash _{Etiv} (sc _{Etiv})	1
PurchCash _{et5ii} (pc _{et5ii}) (etc. from sc _{et1iv to} sc _{et5iv})	
PurchCash _{Etiii} (pc _{Etiii}) SaleCash _{Etv} (sc _{Etv})	
PurchCash _{etliii} (pc _{etliii}) (etc. from sc _{etlv to} sc _{etSv})	
PurchCash _{et2iii} (pc _{et2iii}) SaleCash _{Etvi} (sc _{Etvi})	
PurchCash _{et3iii} (pc _{et3iii}) (etc. from sc _{et1vi to} sc _{et5vi})	
PurchCash _{et4iii} (pc _{et4iii}) SaleCash _{Etvii} (sc _{Etvii})	
PurchCash _{et5iii} (pc _{et5iii}) (etc. from sc _{et1vii} to sc _{et5vii})
HazChemPurch _{Eti} (hcp _{Eti}) SaleCash _{Etviii} (sc _{Etviii})	
HazChemPurchetti (hcpetti) (etc. from scettviii to scet5vii	i)
HazChemPurch _{el2i} (hcp _{el2i}) SaleCash _{Elix} (sc _{Elix})	
HazChemPurch _{et3i} (hcp _{et3i}) (etc. from sc _{et1ix to} sc _{et5ix})	
HazChemPurch _{et4i} (hcp _{et4i}) (etc.)	
(continued next column)	

Figure 30. Randomized Big E, little e transaction table

Big E transaction events more-orless before little e transaction events HazChemPurch_{Eii} (hcp_{Eii})
PurchCash_{Eiiii} (pc_{Eiiii})
SaleCash_{Eiii} (sc_{Eiiii})
PurchCash_{Eii} (pc_{Ei})
PurchCash_{Eiii} (pc_{Eii})
HazChemPurch_{eiói} (hcp_{eiói})

SaleCashet4ii (scet4ii)

HazChemPurch_{Etiii} (hcp_{Etiii}) PurchCash_{et3ii} (pc_{et3ii})

HazChemPurchEtiv (hcpEtiv)

PurchCash_{et5i} (pc_{et5i})

SaleCash_{Etii} (sc_{Etii})

PurchCashet4iii (pcet4iii)

 $SaleCash_{Etiv}\left(sc_{Etiv}\right)$

PurchCash_{et3iii} (pc_{et3iii}) HazChemPurch_{et3i} (hcp_{et3i})

SaleCash_{Erv} (sc_{Erv})

SaleCashet4i (scet4i)

HazChemPurchetli (hcpetli)

SaleCash_{Etvii} (sc_{Etvii})

SaleCash_{et5i} (sc_{et5i})

SaleCash_{Etvi} (sc_{Etvi})

PurchCashetli (pcetli)

HazChemPurchet2ii (hcpet2ii)

PurchCashet2i (pcet2i)

PurchCashet3i (pcet3i)

SaleCashetli (scetli)

HazChemPurchet3ii (hcpet3ii)

PurchCashetlii (pcetlii)

HazChemPurchet7ii (hcpet7ii)

SaleCash_{Etix} (sc_{Etix})

PurchCashet4ii (pcet4ii)

PurchCashetSii (pcetSii)

HazChemPurchet6ii (hcpet6ii)

HazChemPurchet4ii (hcpet4ii)

PurchCashetliii (pcetliii)

HazChemPurchetSii (hcpetSii)

SaleCash_{Etviji} (sc_{Etviji})

PurchCashet2ii (pcet2ii)

(continued next column)

(continued from prior column)

PurchCashei4i (pcei4i)

little e transaction events in randomized sequence (with some Big E transaction events mixed in

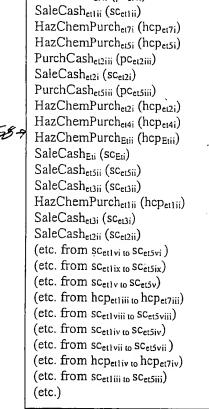


Figure 31. LittleETransaction table transformed to XML

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(Continued on next column)

(continued from prior column) <LittleETranUnits>15</LittleETranUni> ittleETransaction> - <LittleETransaction> <LittleETranID>1167</LittleETranID> <LittleEID>51</LittleEID> <BigETranID>133</BigETranID> <LittleETranTimeDate>2002-02-15T14:05:15</LintleETranTimeDate> <LittleETranUnits>15</LittleETranUnits> </LittleETransaction> - <LittleETransaction> <LittleETranID>1168</LittleETranID> <LittleEID>52</LittleEID> <BigETranID>133</BigETranID> <LittleETranTimeDate>2002-02-15T14:05:15</LittleETranTimeDate> <LittleETranUnits>15</LittleETranUnits> </LittleETransaction> - <LittleETransaction> <LittleETranID>1169</LittleETranID> <LittleEID>53</LittleEID> <BigETranID>133</BigETranID> <LittleETranTimeDate>2002-02-15T14:05:15</LittleETranTimeDate> <LittleETranUnits>15</LittleETranUnits> </LittleETransaction> - <LittleETransaction> <LittleETranID>1170</LittleETranID> <LittleEID>54</LittleEID> · <BigETranID>134</BigETranID> <LittleETranTimeDate>2002-02-15T14:05:15</LittleETranTimeDate> <LittleETranUnits>8</LittleETranUnits> </LittleETransaction> - <LittleETransaction> <LittleETranID>1171</LittleETranID> <LittleEID>55</LittleEID> <BigETranID>134</BigETranID> <LittleETranTimeDate>2002-02-15T14:05:15</LittleETranTimeDate> <LittleETranUnits>8</LittleETranUnits>